linked to intervals between AM PAC CAT administrations. Mixed models were utilized to evaluate associations between interval AM PAC CAT changes and metastasis characteristics.
Results.– Location in the cerebellum ($P = 0.02$) or brainstem ($P = 0.05$), diameter of largest metastasis ($P = 0.05$), and receipt of whole brain radiation ($P = 0.01$) were associated with changes in AM PAC CAT scores. The mean decrease in AM PAC CAT score associated all variables exceeded the AM PAC CAT minimally important difference of 2.0.
Discussion and conclusion.– Patients with brain metastasis in the brain stem or cerebellum, or treated with whole brain radiation therapy should be referred for rehabilitation services.

http://dx.doi.org/10.1016/j.rehab.2014.03.1346

CO60-004-e

Impact of comprehensive rehabilitation treatment on functional assessment and quality of life in patients with brain tumours

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Keywords: Oncology; Physical exercises; Cancer; Rehabilitation
Background.– Brain tumours patients characterized by high and uncertain prognosis, however, require rehabilitation because of accompanying neurological disorders. Occupational therapy and physiotherapy are an integral part of rehabilitation in cancer patients, which may have an impact on quality of life (QoL). The aim of study was assessment of rehabilitation on QoL and functional measures of patients with brain tumours.
Material and methods.– We presented the experience of the application of physical exercises and occupational therapy in 32 patients. The outcomes were measured based on scales: FIM, Disability Rating (DRS), Karnofsky (KPS) and FACT-Br applied on admission and after treatment (6 weeks).
Results.– Improvement in total functional outcome was indicated by all functional measures (FIM: $F = 46.4$, $P < .05$; DRS: $F = 19.5$, $P < .05$; KPS: $F = 10.1$, $P < .05$). Significant improvements were found between admission and discharge scores for the FIM and DRS. All admission and discharge functional scales (FIM, DRS, KPS) correlated significantly with each other. No significant change was noted in the FACT-Br between admission and discharge scores.
Discussion.– Patients with brain tumours experienced changes in function and QoL during their disease course and treatment. Rehabilitation services may offer a unique opportunity to influence both functional outcome and more closely assess QoL in these individuals.

http://dx.doi.org/10.1016/j.rehab.2014.03.1347

CO60-005-e

Head and neck cancer related paralysis and quality of life: An observational study

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Keywords: Head and neck cancer; Secondary paralysis; Quality of life
Introduction.– Head and Neck Cancer (H&NC) often causes disability [1]: our observational study evaluated secondary paralysis and Health Related Quality of Life (HRQoL) in an H&NC population.
Material and methods.– From 01.01.12 to 30.11.13, we enrolled 31 H&NC Italian patients. Inclusion criteria were: age 18–85, no metastasis, no severe comorbidities, no other cancer, informed consent. Data were: sex, age, BMI, radiotherapy) HRQoL with SF12 and secondary paralysis.
Results.– Female 25%, male 75%, median age 55, median BMI 25.75; the cancer sites were oral cavity 50%, parotid gland 22%, pharynx 9.4%, larynx 18.5%; unilateral neck dissection was 84.4% and bilateral 15,6%; at T0: SF12 PCS average 42.16 (SD 9.4) MCS average 50 (SD 11.1), facial paralysis 85%, accessory paralysis 55%; at T1: SF12 PCS average 42.6 (SD 9.6) MCS average 52 (SD 12.1), facial paralysis 70%, accessory paralysis 50%.
Discussion.– Facial and accessory paralysis effective treatment improves HRQoL and avoid social disadvantages.
Reference
[1] Karthikevan G, Udava Kumar M, Sanjav Sudhakar S. A comprehensive review of head and neck cancer rehabilitation. Indian J Palliat Care 2012;18:87–97.

http://dx.doi.org/10.1016/j.rehab.2014.03.1348

CO60-006-e

Long thoracic nerve injury in breast cancer patients: Electromyography and course

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Keywords: Winged scapula; Long thoracic nerve; Breast cancer
Introduction.– The winged scapula is a complication of axillary surgery in breast cancer patients due to a long thoracic nerve injury. The scapula becomes unstable and causes pain, weakness and shoulder dysfunction.
Material and methods.– Prospective observational study of breast cancer patients surgically treated between 2008 and 2011. Patients were evaluated at the 1st, 6th and 12th post-surgical months. An electromyography study was done when a winged scapula was observed. The risk factors were analyzed for socio-demographic data, breast and nodal surgery, surgical complications, tumor characteristics, chemotherapy, hormonal therapy and radiotherapy.
Results.– Among the 258 included patients, there were 39 with winged scapula (15.1%). The nerve injury was confirmed by electromyography in 30 patients (11.6%). There were 27 partial and 3 severe axonotmesis. The group with nerve injury had significant smaller body mass index (26.2 vs 28.2, $P = 0.045$). No other significant differences were observed. At 12 month after surgery, the electromyography was normalized in 21 cases (70.0%). Patients recovered at 12 month were 13.5 years younger than the not recovered (95% CI 27.263–0.211, $P = 0.53$).
Discussion.– In most cases, the lesion was a partial axonotmesis, recovered at 12 months. The only risk factor identified was a smaller body mass index.

http://dx.doi.org/10.1016/j.rehab.2014.03.1349

CO60-007-e

Regular physical exercises for biochemical parameters and inflammatory marker levels in prostate cancer patients during radiotherapy - A randomized clinical study

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Keywords: Fitness; Rehabilitation; Radiation therapy; Oncology
Introduction and objectives.- The aim of this study was an assessment impact physical exercises on prevent deterioration in hemorheology, metabolic and inflammatory marker changes during radiotherapy (RT) for patients with localized non-early stage prostate carcinoma (PCa).
Material and methods.- Fifty-four men were randomized before they received radical RT for PCa, with 27 men to an exercise group (EG) and 27 men to a control group (UG). Outcome measures were blood parameters, serum levels of hepatic and renal function biomarkers (urea, creatinine, AspAT and AlAT, PSA) and cytokines (IL-1(, IL-6, TNF-() in a modified shuttle test before and after RT.
Results.- The hemorheology were decreased (*P*Ý<Ý0.05) in most parameters after RT as well as the liver, renal biomarkers and PSA did not change (*P*Ý>Ý0.05) in both group. Level of IL-6 was increased in both group after RT, but statistical significantly in EG. Other cytokine levels decreased in EG (*P*Ý>Ý0.05).
Discussion.- The physical activity in PCa patients during RT did not influence on blood parameters, they were decreased after treatment but in this time serum levels of IL-6 was increased in contrast to other pro-inflammatory cytokines (decrease IL-1(and TNF-(). This pilot study evidence the beneficial effects of physical exercise on cancer treatment.

http://dx.doi.org/10.1016/j.rehab.2014.03.1350

CO67-001-e

Communication of an oncology and rehabilitation team with their cancer patients

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Keywords: Surgical oncology; Musculoskeletal disorders; Physical training; Communication
Introduction.– Cancer patients may experience musculoskeletal disorders due to the primary neoplasm, surgical and oncological treatments, or due to their age and comorbid conditions. These lead to difficulties in performing the everyday activities, professional and social limitations, as well as psychological deficits.
Material and methods.– This is a cross-sectional study performed in a surgical oncology unit. Fifty-four patients with neoplasms underwent a surgical treatment. Afterwards they were addressed to a rehabilitation specialist who performed progressive physical training. After one month the 52 surviving patients completed a questionnaire focused on their communication with the interdisciplinary oncology and rehabilitation team.
Results.– Over 70% of patients knew why they were admitted in the surgical oncology unit, were informed about the type of surgery and about the disease stage, complications and life expectancy. Over 85% of patients considered the rehabilitation program necessary for their physical and mental health status.
Discussion.– The communication of cancer patients with their oncology surgeons and rehabilitation specialists is important in biopsychosocial understanding of illness, identifying the needs and resources for individuals to have a better life.
Further reading
Kristiansen M, Adamsen L, Hendriksen C. Readiness for cancer rehabilitation in Denmark: protocol for a cross-sectional mixed methods study. BMJ Open 2013; 3: e003775.

http://dx.doi.org/10.1016/j.rehab.2014.03.1351

CO67-002-e

Our experience of rehabilitation in early postoperative period after breast cancer surgery

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Keyword: Breast cancer
Introduction.– The study aimed to explore the use of multidimensional rehabilitation in early postoperative period after breast cancer surgery.
Methods.– Analysis was performed prospectively and retrospectively at study cohort (178 female, 30–72 years) and control cohort (150 female, 33–74 years) of surgically treatment breast cancer patients. Rehabilitation therapy was provided at study cohorts next day after surgery. It included physical activities of patients, massage in the electrostatic field, common magnetotherapy. Effectiveness was analyzed by presence of pain, edema and chylorrhea, which were clinically in the early postoperative period and at follow-up visits at 6 months.
Results.– Hospital stay in patients who received early rehabilitation was 4–5 days less than in the control cohort. The presence of the pain, edema and chylorrhea were noted among the study cohort in 10%, 24%, and 18% and were lower compared with control group—12%, 29% and 24% respectively. The follow-up comparison at 6 months demonstrated the pain and edema in 32% and 41% in study cohort whereas these markers significantly higher in control group—48% and 63% respectively.
Discussion.– Early postoperative multidimensional rehabilitation at surgically treated female breast cancer patients significantly decreased treatment-related morbidities after primary treatment.

http://dx.doi.org/10.1016/j.rehab.2014.03.1352

CO67-003-e

Multidisciplinary rehabilitation program after breast cancer: Potential benefits analysis on physical function and quality of life

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Keywords: Breast cancer; Rehabilitation; Quality of life; Physical and psychological states
Objective.– To determine the potential benefits, both physically and psychologically, of a multidisciplinary rehabilitation program among women treated for breast cancer.
Materials and methods.– Thirty patients were recruited, sixteen in the control group and fourteen in the treated group. This group has benefited from a rehabilitation of three months including a supervised training and various psycho-educational sessions. The assessments, performed before and after the program, included anthropometric and body composition measurements, a functional assessment and various questionnaires.
Results.– After three months, the health state (quality of life), emotional state, physical, cognitive and social functions and the symptoms of insomnia and anxiety significantly improve in the treated group. This observation also applies to the flexibility, maximal aerobic power/body weight, time to exhaustion during the physical effort test and walking distance in six minutes. In the control group, these improvements do not appear.
Discussion.– This preliminary study demonstrates the feasibility and benefits of a multidisciplinary approach in women after their treatments for breast cancer.

http://dx.doi.org/10.1016/j.rehab.2014.03.1353

CO67-004-e

Incidence and severity of lymphedema after breast cancer surgery

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